

Rejection of the Claims Pursuant to 35 U. S. C. Section 103(a) is in error,
and should be withdrawn

Claims 1 – 11, 13 – 17, 21 – 26 and 28 were rejected over the combination of *Ronzio et al.* U. S. Patent No. 5,762,936 with the publication by *Parr et al.* in J. Sci Food Agric 80:985 – 1012 (2000). The Office Action does not contain specific language rejecting Claims 12, 18 – 20, 27 and 29 – 31, however the Office action does state that all claims under consideration are rejected. The present response to the Office Action and these “Remarks” therefore address and for the reasons explained below traverse the rejection of all claims 1 - 31.

The present invention and claims in consideration are drawn to a product comprising phenolics bound by covalent bonds to vegetable protein. This is amply described and explained in great detail in the specification. Covalently binding the phenolics to the protein requires a step of oxidation. Whereas the precise chemical nature of the covalent binding of the phenolics compounds to protein is described in the introductory section (pages 2 and 3), covalently binding the phenolics to the protein in practical amounts requires a step of oxidation, that is substantial exposure to oxygen in an alkaline medium. This is described on pages 8, 9, and in connection with Specific Examples 1 - 3 (pages 14 - 17). As a result of this oxidation step in alkaline medium the products of the invention indeed have a substantial amount of phenolics covalently bound to the vegetable protein.

Applicant is aware and acknowledges that for a product-by-process claim to be patentable the product itself must be novel and unobvious over the prior art. However, these conditions are amply satisfied by the subject matter of the present claims, be they product or product by process claims. This is because the cited references do not describe or suggest phenolics bound by covalent bonds to vegetable protein. Specifically, the cited *Ronzio et al.* reference describes phenolics material that is extracted from the coating of lentil seeds with water and organic solvent. There is no mention or suggestion in this reference of covalently

bonding, much less of deliberately covalently binding the phenolics to protein. Moreover, the step of making the solutions alkaline during the extraction process is also missing from the reference, thereby revealing that the substantial oxidation and covalent bonding is unlikely to have taken place in the extract of this reference.

The cited *Parr et al.* publication is an extensive description of plant phenolics, their role in the plant and animal kingdom and of potential health benefits to humans. But this reference also lacks any mention or suggestion of covalently bonding the phenolics to vegetable protein, and certainly lacks the step of deliberately subjecting a mixture of vegetable protein and plant phenolics to oxygen in alkaline medium to cause covalent bonding. The lack of this step in this reference is significant because, again, it reveals that the phenolic products described in the reference do not contain plant phenolics bound to vegetable protein in any practical or substantial amount.

In light of the foregoing, the holding of obviousness of the instant claims is in error, and should not be maintained. All outstanding claims are in *prima facie* allowable condition, and their early allowance is respectfully solicited.

If in the opinion of the Examiner in charge of this case a telephone conference with the undersigned attorney would materially facilitate the final disposition of this case, then the Examiner in charge is respectfully requested to telephone the undersigned attorney at the below given telephone number.

In accordance with the Patent Office Rules effective March 1, 2001, in the appended attachment titled "Version with Markings to Show Changes Made" applicant, acting through the undersigned attorney, also presents the amended subject matter in the format wherein the deleted material is indicated in square brackets and added material is underlined in accordance with prior practice.

Respectfully submitted

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VERSION WITH MARKINGS TO SHOW CHANGES MADE IN THE
SPECIFICATION

Page 17, lines 18 – 21 CHANGE the paragraph present in these lines, as shown by the markings below:

“3 lbs. of the phenolated buckwheat protein of Example 2 was mixed with 6 lbs. of soy protein isolate, 13 lbs. of crystalline fructose, 5 lbs. of Dutch processed cocoa, 0.2 lbs. stevia extract, 0.1 lbs. lecithin, 0.05 lbs. medium chain triglycerides, 0.09 lbs. ascorbic acid, 0.03 lbs. vitamin E acetate, 0.02 lbs. digestive enzyme mix [(Aminogen™)] (AMINOGEN™).”

VERSION WITH MARKINGS TO SHOW CHANGES MADE IN
THE CLAIMS

1. (amended) A dietary supplement comprising a pharmaceutically acceptable excipient, and vegetable protein bound phenolics, the phenolics being bound to the protein by covalent bond.

11. (amended) A dietary supplement comprising a pharmaceutically acceptable excipient; and vegetable protein bound phenolics, the phenolics being bound to the protein by covalent bond wherein said dietary supplement has been prepared by a process comprising the steps of:

adding alkali to an admixture of vegetable flour with water where said flour comprises naturally occurring protein and naturally occurring phenolics until said aqueous admixture is of alkaline pH;

allowing the naturally occurring phenolics to oxidize and covalently attach to the protein;

removing solids from said admixture of alkaline pH;

adding acid to the admixture until said admixture is of neutral or acidic pH thereby causing vegetable protein bound phenolics to precipitate as a solid;

isolating the solid precipitate, and

admixing the vegetable protein bound phenolics constituting a solid precipitate with a pharmaceutically acceptable excipient.

24. (amended) A food product comprising vegetable protein bound phenolics, the phenolics being bound to the protein by covalent bond wherein said food product has an antioxidant capacity of 50 to 2,000 micromoles of trolox equivalent per gram of the food product, said phenolics being from a source selected from the group consisting of buckwheat, sunflower seeds, soy beans, hops, mustard seeds, cottonseeds, peanuts, safflower seeds, rape seed and flax seeds.

26. (amended) A food product comprising vegetable protein bound phenolics, the phenolics being bound to the protein by covalent bond wherein said

food product has an antioxidant capacity of 50 to 2,000 micromoles of trolox equivalent per gram of the food product, said food product having been prepared by a process comprising the steps of:

adding alkali to an admixture of vegetable flour with water where said flour comprises naturally occurring protein and naturally occurring phenolics until said aqueous admixture is of alkaline pH;

allowing the naturally occurring phenolics to oxidize and covalently attach to the protein;

removing solids from said admixture of alkaline pH;

adding acid to the admixture until said admixture is of neutral or acidic pH thereby causing vegetable protein bound phenolics to precipitate as a solid;

isolating the solid precipitate, and

admixing the vegetable protein bound phenolics constituting a solid precipitate with a nutritional product having caloric value.